2003-2004 Influenza Season Summary

Sentinel Surveillance

Sentinel surveillance data were collected from the middle of October through the middle of March. Data from the first six weeks were used to determine baseline and threshold levels of influenza-like illness in Virginia. Data from the remainder of the season were used to classify influenza activity as sporadic, local, regional, or widespread. The influenza season started early this year with sporadic activity first reported during the week ending November 1, local activity first reported during the week ending November 19, and widespread activity occurring from the weeks ending December 3, 2003, through January 7, 2004. Peak activity occurred during the week ending December 17, 2003, which was approximately one week before the peak reported in the CDC U.S. Sentinel Physician Surveillance Network and approximately eight weeks earlier than peak activity during the Virginia 2002-03 influenza season. Graph 1 shows weekly surveillance numbers by region; Graph 2 shows comparisons between 2003-04 and 2002-03 Virginia influenza seasons.

Outbreaks

Twenty-nine outbreaks of influenza were reported to VDH from various facilities, including nursing homes/assisted living facilities (19), long term care/rehabilitation centers (4), adult homes (3), military bases (2) and a dormitory living facility (1). Of the 29 reported outbreaks, 14 were from the Southwest region, 5 from the Northwest, 5 from the Central, 3 from the North and 2 from the Eastern region of Virginia. The first outbreak was reported during the week ending October 29, 2003, and the last was reported during the week ending December 31, 2003. The greatest number of outbreaks (N=10) was reported during the week ending December 17, which coincided with the peak in sentinel surveillance activity. Various strategies were used to contain outbreaks, including vaccination of unvaccinated individuals; administering antivirals; cohorting staff/residents; implementing infection control precautions; and halting facility admissions until the outbreak was contained.

Childhood Deaths and Encephalopathies

Three non-fatal influenza-associated encephalopathies were reported in children ages 1, 3 and 14 years. Two of the children were from the Northwest Region of the state and one was from the Southwest. VDH reported one influenza-associated death in a one-year old from the Northwest Region. Nationwide, 142 influenza-associated deaths in children were reported to the CDC.

Laboratory Surveillance

Between October 1, 2003, and March 31, 2004, the Division of Consolidated Laboratory Services (DCLS) received 391 respiratory specimens for influenza detection. Of those 391 specimens, 376 were suitable for antigen detection by direct fluorescent assay (DFA) and culture. The remainder were unsatisfactory for laboratory testing.

Influenza A virus was detected in 158 patients by DFA, culture, or both. No influenza B virus was detected. The first specimen confirmed positive for influenza A was collected November 6, 2003; the last specimen influenza positive was collected December 31, 2003. Eighty-eight influenza A virus isolates were subtyped (87 isolated at DCLS and 1 referred from another laboratory). All 88 were identified as influenza A H3 by monoclonal antibody. Seven have been further subtyped at CDC as influenza A/Korea/770/2002-like (H3N2), also called the Fujian strain. Subtyping of 12 other influenza A (H3) isolates is pending.

Virus cultures from 11 of the 334 patients grew other viruses and not influenza. One culture, from a patient with influenza A detected by DFA, grew herpes simplex virus whose cytopathic effect obviated further culture for influenza virus. Ten cultures, from patients with no influenza detected by DFA or culture, grew the following viruses: parainfluenza virus type 1 (2), respiratory syncytial virus (1), adenovirus (5), cytomegalovirus (1), and herpes simplex virus (1).

Nationwide, between September 28, 2003, and March 27, 2004, 21.0 % (24,177) of the 115,222 respiratory specimens sent to the U.S. World Health Organization (WHO) Collaborating Laboratories and National Respiratory and Enteric Virus Surveillance System tested positive for influenza virus. Of these, 99.2% (23,993) of the influenza viruses identified were type A and 0.8% (184) were type B (See Graph 3). Of the 6,875 influenza A viruses that were subtyped, 99.9% (6,873) were influenza A (H3N2) viruses and 2 (0.1%) were influenza A (H1) viruses. Of the 833 influenza A (H3N2) isolates that have been antigenically characterized by the CDC, 106 (12.7%) were similar to the vaccine strain A/Panama/2007/99 (H3N2) and 727 (87.3%) were similar to the drift variant, A/Fujian/411/2002 (H3N2).

Vaccine

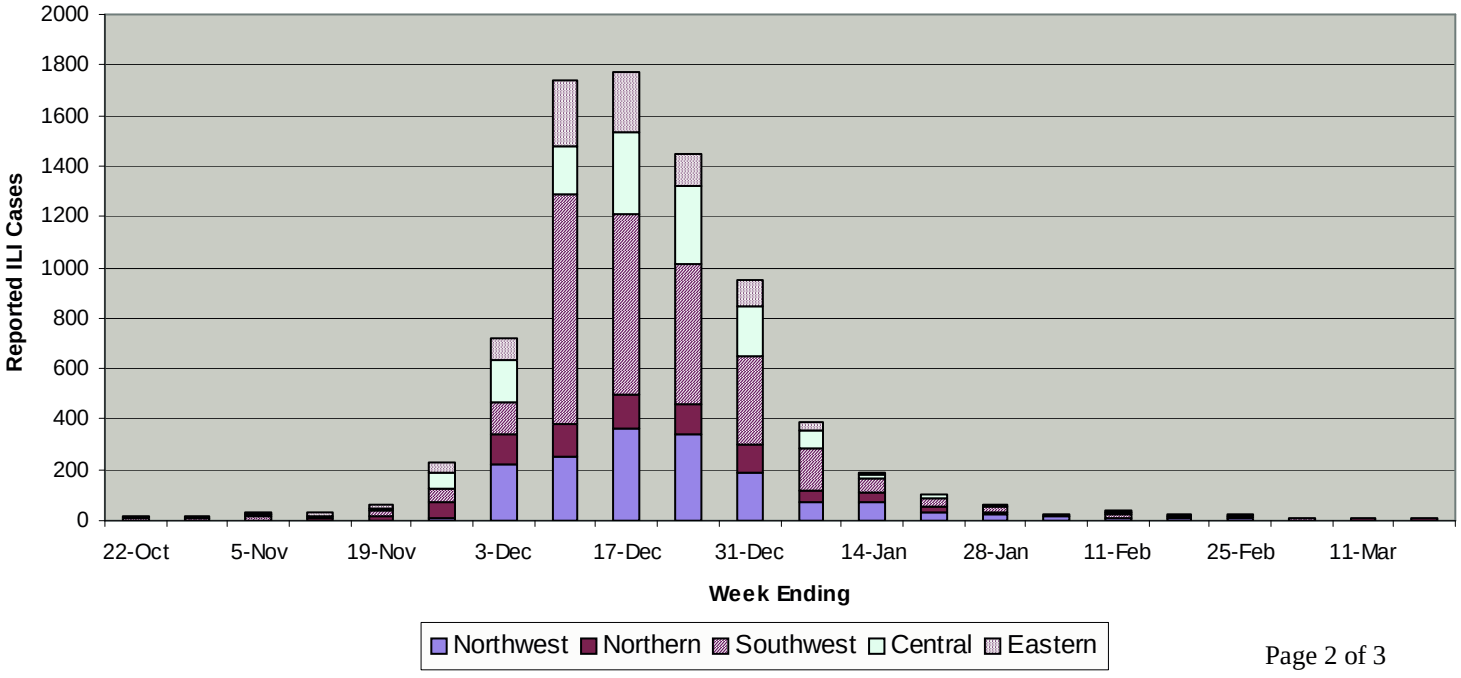
The trivalent influenza vaccine for the 2004-05 season will include one virus from the 2003-04 vaccine [A/New Caledonia/20/99 (H1N1)-like] and two new viruses [A/Fujian/411/2002 (H3N2)-like) and B/Shanghai/361/2002-like]. Based on early projections, vaccine manufacturers anticipate production of between 90 and 100 million doses of vaccine in 2004. Total production in 2003 was 86.9 million doses.

In February, the Advisory Committee on Immunization Practices met to consider updates to its annual vaccine recommendations. The recommendations were published in the *Morbidity and Mortality Weekly Report (MMWR)* on May 28, 2004 (http://www.cdc.gov/mmwr/). Changes include:

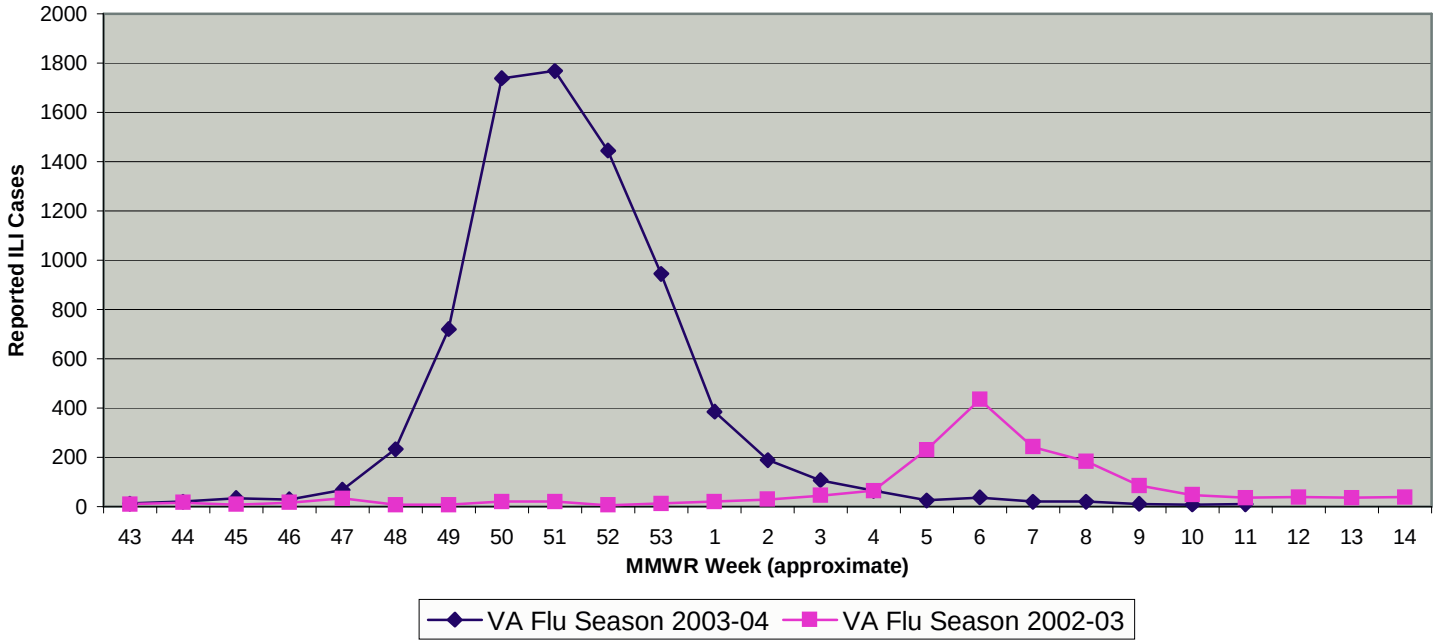
- Influenza vaccine is now routinely recommended for all children ages 6-23 months.
- Women who will be pregnant at any time during the influenza season should be vaccinated.
- The guidance for use of live attenuated influenza vaccine (FluMist) versus inactivated vaccine among healthcare workers and other contacts of high-risk persons will be narrowed. Specifically, the inactivated vaccine is preferred only for persons who have close contact with severely immunosuppressed persons (e.g., patients with hematopoietic stem cell transplants) during those periods in which the immunosuppressed person requires care in a protective environment. There is no preference for inactivated influenza vaccine use by contacts of persons with lesser degrees of immunosuppression or other high-risk conditions (e.g., diabetes mellitus, HIV).
- The length of time that persons vaccinated with the live attenuated vaccine are recommended to avoid contact with severely immunocompromised persons is changed from 21 to 7 days after vaccination.

Graphs

Graph 1. Influenza-like Illness (ILI) Reported by Sentinel Physicians During the 2003-04 Virginia Flu Season, by Region



Graph 2. Comparison of Reported Influenza-like (ILI) Illness Cases from Virginia Sentinel Physicians for the 2002-03 and 2003-04 Flu Seasons*



*Note: 72 providers participated in sentinel surveillance during the 2003-04 flu season compared to 53 providers during 2002-03.

Graph 3. Comparison of Influenza Tests Conducted by WHO/NREVSS Laboratories for the 2002-03 and 2003-04 Seasons